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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,097	01/18/2006	Marijke De Meyer	505217	7358

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EXAMINER	
WALTERS JR, ROBERT S	

ART UNIT	PAPER NUMBER
4172	

NOTIFICATION DATE	DELIVERY MODE
06/27/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/565,097	DE MEYER ET AL.	
	Examiner	Art Unit	
	ROBERT S. WALTERS JR	4172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-24* is/are pending in the application.

4a) Of the above claim(s) *19,21 and 24* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-18, 20, and 22-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/2/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Application

Claims 13-24 are pending, claims 1-12 were cancelled, claims 19, 21, and 24 are withdrawn as being drawn to a non-elected invention, and claims 13-18, 20, and 22-23 are presented for examination.

Election/Restrictions

Applicant's election with traverse of claims 13-18, 20, and 22-23 in the reply filed on 5/14/2008 is acknowledged. The traversal is on the ground(s) that in regards to claim 24, the examiner failed to prove an undue burden regarding the search and failed to show that the apparatus and process were patentably distinct. This is not found persuasive because this application is a 371 of PCT/EP04/10673 and therefore the examiner only needs to prove a lack of unity of invention under PCT Rule 13.1, rather than proving both a search burden and patentably distinct inventions. The examiner proved this lack of unity, by pointing to Goedicke et al. (DE 19527515, hereinafter referred to as Goedicke) to prove that the common technical feature of the inventions is not a special technical feature and that restriction is proper.

The requirement is still deemed proper and is therefore made FINAL.

Specification

The abstract of the disclosure is objected to because of the use of "means" and "said". Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed

150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. **The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.**

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 13-15, 17-18, 20, and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goedicke in view of Hörzenberger (EP 1201321).

Regarding claims 13-15, 17-18, 20, and 22-23, Goedicke teaches a method for the production of metal coated steel sheet products (abstract) comprising the steps of providing a steel product with a Zn coating (abstract), subjecting the product to a plasma treatment (though it doesn't seem to explicitly disclose it being performed under vacuum, it would be readily apparent to one of ordinary skill in the art at the time of the invention to perform this treatment under vacuum, as it is well known in the art to carry out plasma treatments under vacuum in a chamber) to prepare the material (this would necessarily clean and activate the surface of the material, see pg 2 of machine translation, 11th paragraph) prior to adding an additional metallic element, then adding an additional metallic element to the coating (abstract), that additional element potentially being magnesium (pg 2 of machine translation, 10th paragraph) through a physical vapour deposition technique, specifically sputtering (abstract), and finally subjecting the product to a thermal treatment under an inert atmosphere (abstract).

Thus, Goedicke teaches most elements required by instant claims 13-15, 17-18, 20, and 22-23 but fails to teach the thermal treatment(recited in claim 13) being applied by directing high energy infra red radiation towards the outer surface of said coating, where the infra red radiation

is directed towards both sides of the sheet for an interval between 3 and 8 seconds and the energy density is at least 400 kW/m^2.

Hörzenberger teaches a method of curing (a thermal treatment) a coating on a metal sheet (0001) comprising using high energy infra red radiation (0014) which can be directed to the outer surface of the coating, specifically both sides of the sheet (0020) and at an energy density of at least 400 kW/m^2 (0014). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Goedicke's method of producing a steel product by implementing Hörzenberger's curing step as the thermal treatment to provide an improved system.

It would have been noted that the application of the radiation for 3 to 8 seconds has not been explicitly mentioned by the references combined, however, this said variation is considered minor where it does not render the claims patentably distinct since it would have been obvious to one of ordinary skill in the art at the time of the invention to choose the instantly claimed range through process optimization, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See In re Boesch, 205 USPQ 215 (CCPA 1980).

One would have been motivated to make this modification as Hörzenberger teaches that the use of IR radiation allows for the entire metal and coating to be heated to a similar temperature in a short time (0026) and for the heating and galvanizing (initial metallic coating application) to be conducted in a single production line (0036), therefore this allows for a reduction in the time required for Goedicke's process and a greater efficiency in the process.

2. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goedicke in view of Hörzenberger as applied to claim 13 above, and further in view of Shimogori et al. (U.S. Pat. No. 5002837, hereinafter referred to as Shimogori).

Regarding claim 15, Goedicke in view of Hörzenberger's teaching is mentioned in previous 103 rejection. Goedicke in view of Hörzenberger further teaches that the additional metallic element is added through sputtering (abstract) however may fail to teach the additional metallic element being Mg that is required by instant claim 15.

Shimogori teaches the coating of a Zn-Mg alloy layer over steel sheets (column 7, lines 3-9), demonstrating the benefits of adding Mg as an additional element to a zinc coating on a steel substrate. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Goedicke in view Hörzenberger's method for the production of a metal coated steel product with Shimogori as the addition of Mg as suggested by Shimogori would provide an improved metal coated steel product. One would have been motivated to make this modification as Shimogori teaches that Zn-Mg alloy plating layers show outstanding corrosion resistance, adhesion to the steel surface, and improved formability (column 7, lines 3-16).

3. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goedicke in view of Hörzenberger as applied to claim 13 above, and further in view of Spence (U.S. Pat No. 6059935).

Regarding claim 16, Goedicke in view of Hörzenberger teach all the limitations but fails to disclose the plasma treatment being a dielectric barrier discharge treatment taking place at a pressure of between 0.1 bar and 1 bar, under an atmosphere consisting of nitrogen or nitrogen and hydrogen that is required by instance claim 16.

Spence teaches a method of generating a plasma (abstract), near atmospheric pressure (abstract, though the claimed range is not explicitly taught it would have been obvious to one of ordinary skill in the art at the time of the invention to choose the instantly claimed ranges through routine optimization), which is generated by a dielectric barrier discharge method (abstract and Figure 1) which may be conducted under a nitrogen atmosphere (column 3, lines 20-23).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Goedicke in view of Hörzenberger's method with the plasma treatment as suggested by Spence as it would allow for the treatment to be performed near atmospheric pressure. One would have been motivated to make this modification as Spence teaches that the amount of time in performing the treatment is reduced (abstract) and given that the process can be performed at atmospheric pressure, it will necessarily be cheaper as a vacuum chamber and apparatus will not be necessary. Thus, the utilization of Spence's method would allow for the plasma treatment conducted in Goedicke in view of Hörzenberger's method to be peformed in a more cost efficient manner.

4. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goedicke in view of Hörzenberger as applied to claim 13 above, and further in view of Yasuda et al. (U.S. Pat. No. 4980196, hereinafter referred to as Yasuda).

Regarding claim 17, Goedicke in view of Hörzenberger teach all the limitations of claim but fails to teach the plasma treatment taking place under vacuum(required by claim 17). Yasuda teaches the pretreatment of a steel substrate by a vacuum plasma treatment (see Step 1, columns 3-5) for improved corrosion protection of steel (abstract). It would have been obvious to one of ordinary skill in the art to modify Goedicke in view of Hörzenberger with Yasuda as Yasuda's specific plasma treatment could be incorporated into Goedicke in view of Hörzenberger's method to provide an improvement in the treatment of the coated metal prior to the addition of the second element. One would have been motivated to make this modification as Yasuda teaches that the pretreatment can be used to remove contaminants (column 4, lines 41-46) and could also be used to make it more reactive and provide better adhesion for a coating, which would be beneficial in Goedicke in view of Hörzenberger's method as it would allow for Goedicke in view of Hörzenberger's coated metal product to have a better deposition of the additional element to it.

Conclusion

Claims 1-12 were cancelled.

Claims 13-24 are pending.

Claims 19, 21, and 24 are withdrawn.

Claims 13-18, 20, and 22-23 are rejected.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT S. WALTERS JR whose telephone number is (571)270-5351. The examiner can normally be reached on Monday-Thursday, 6:30am to 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on (571)272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ROBERT S. WALTERS JR/
June 19, 2008
Examiner, Art Unit 4172

/Vickie Kim/
Supervisory Patent Examiner, Art Unit 4172